

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

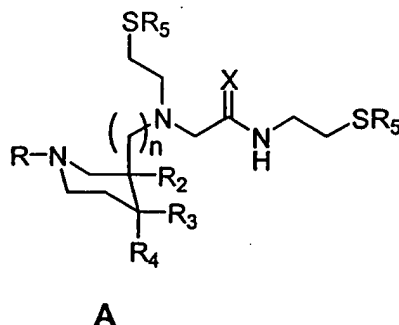
- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

We Claim:

1. A compound represented by A:



wherein

X represents O or (H)₂;

R represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxy carbonyl, or alkylaminocarbonyl;

R₂ represents H;

R₃ represents optionally substituted aryl or heteroaryl;

R₄ represents H;

R₅ represents independently for each occurrence H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxy carbonyl, or alkylaminocarbonyl; and

n is 0, 1, or 2.

2. The compound of claim 1, wherein X represents O.
3. The compound of claim 1, wherein R represents alkyl.
4. The compound of claim 1, wherein R₃ represents optionally substituted phenyl.
5. The compound of claim 1, wherein R₅ represents H or aralkyl.
6. The compound of claim 1, wherein n is 1.
7. The compound of claim 1, wherein X represents O; and R represents alkyl.
8. The compound of claim 1, wherein X represents O; and R₃ represents optionally substituted phenyl.

9. The compound of claim 1, wherein X represents O; and R₅ represents independently for each occurrence H or aralkyl.

10. The compound of claim 1, wherein X represents O; and n is 1.

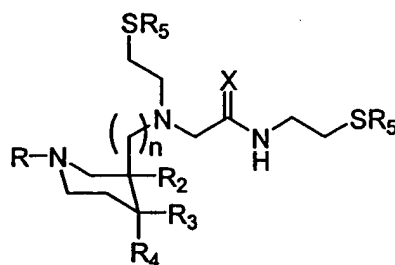
11. The compound of claim 1, wherein X represents O; R represents alkyl; and R₃ represents optionally substituted phenyl.

12. The compound of claim 1, wherein X represents O; R represents alkyl; and R₅ represents independently for each occurrence H or aralkyl.

13. The compound of claim 1, wherein X represents O; R represents alkyl; R₃ represents optionally substituted phenyl; and R₅ represents independently for each occurrence H or aralkyl.

14. The compound of claim 1, wherein X represents O; R represents methyl; R₃ represents 4-chlorophenyl; R₅ represents independently for each occurrence H or 4-methoxybenzyl; and n is 1.

15. A compound represented by B:



B

wherein

X represents O or (H)₂;

R represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

R₂ represents H;

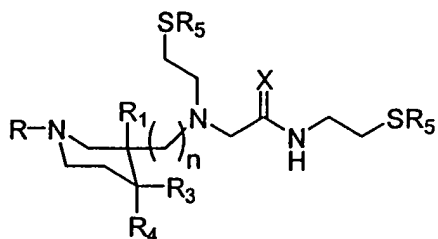
R₃ represents H;

R₄ represents optionally substituted aryl or heteroaryl;

R₅ represents independently for each occurrence H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxy carbonyl, or alkylaminocarbonyl; and

n is 0, 1, or 2.

16. The compound of claim 15, wherein X represents O.
17. The compound of claim 15, wherein R represents alkyl.
18. The compound of claim 15, wherein R₄ represents optionally substituted phenyl.
19. The compound of claim 15, wherein R₅ represents H or aralkyl.
20. The compound of claim 15, wherein n is 1.
21. The compound of claim 15, wherein X represents O; and R represents alkyl.
22. The compound of claim 15, wherein X represents O; and R₄ represents optionally substituted phenyl.
23. The compound of claim 15, wherein X represents O; and R₅ represents independently for each occurrence H or aralkyl.
24. The compound of claim 15, wherein X represents O; and n is 1.
25. The compound of claim 15, wherein X represents O; R represents alkyl; and R₄ represents optionally substituted phenyl.
26. The compound of claim 15, wherein X represents O; R represents alkyl; and R₅ represents independently for each occurrence H or aralkyl.
27. The compound of claim 15, wherein X represents O; R represents alkyl; R₄ represents optionally substituted phenyl; and R₅ represents independently for each occurrence H or aralkyl.
28. The compound of claim 15, wherein X represents O; R represents methyl; R₄ represents 4-chlorophenyl; R₅ represents independently for each occurrence H or 4-methoxybenzyl; and n is 1.
29. A compound represented by C:



C

wherein

X represents O or (H)₂;

R represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

R₁ represents H;

R₃ represents optionally substituted aryl or heteroaryl;

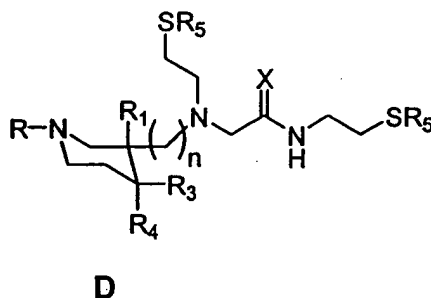
R₄ represents H;

R₅ represents independently for each occurrence H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl; and

n is 0, 1, or 2.

30. The compound of claim 29, wherein X represents O.
31. The compound of claim 29, wherein R represents alkyl.
32. The compound of claim 29, wherein R₃ represents optionally substituted phenyl.
33. The compound of claim 29, wherein R₅ represents H or aralkyl.
34. The compound of claim 29, wherein n is 1.
35. The compound of claim 29, wherein X represents O; and R represents alkyl.
36. The compound of claim 29, wherein X represents O; and R₃ represents optionally substituted phenyl.
37. The compound of claim 29, wherein X represents O; and R₅ represents independently for each occurrence H or aralkyl.

38. The compound of claim 29, wherein X represents O; and n is 1.
39. The compound of claim 29, wherein X represents O; R represents alkyl; and R₃ represents optionally substituted phenyl.
40. The compound of claim 29, wherein X represents O; R represents alkyl; and R₅ represents independently for each occurrence H or aralkyl.
41. The compound of claim 29, wherein X represents O; R represents alkyl; R₃ represents optionally substituted phenyl; and R₅ represents independently for each occurrence H or aralkyl.
42. The compound of claim 29, wherein X represents O; R represents methyl; R₃ represents 4-chlorophenyl; R₅ represents independently for each occurrence H or 4-methoxybenzyl; and n is 1.
43. A compound represented by D:



wherein

X represents O or (H)₂;

R represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

R₁ represents H;

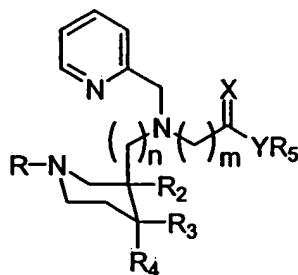
R₃ represents H;

R₄ represents optionally substituted aryl or heteroaryl;

R₅ represents independently for each occurrence H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl; and

n is 0, 1, or 2.

44. The compound of claim 43, wherein X represents O.
45. The compound of claim 43, wherein R represents alkyl.
46. The compound of claim 43, wherein R_4 represents optionally substituted phenyl.
47. The compound of claim 43, wherein R_5 represents H or aralkyl.
48. The compound of claim 43, wherein n is 1.
49. The compound of claim 43, wherein X represents O; and R represents alkyl.
50. The compound of claim 43, wherein X represents O; and R_4 represents optionally substituted phenyl.
51. The compound of claim 43, wherein X represents O; and R_5 represents independently for each occurrence H or aralkyl.
52. The compound of claim 43, wherein X represents O; and n is 1.
53. The compound of claim 43, wherein X represents O; R represents alkyl; and R_4 represents optionally substituted phenyl.
54. The compound of claim 43, wherein X represents O; R represents alkyl; and R_5 represents independently for each occurrence H or aralkyl.
55. The compound of claim 43, wherein X represents O; R represents alkyl; R_4 represents optionally substituted phenyl; and R_5 represents independently for each occurrence H or aralkyl.
56. The compound of claim 43, wherein X represents O; R represents methyl; R_4 represents 4-chlorophenyl; R_5 represents independently for each occurrence H or 4-methoxybenzyl; and n is 1.
57. A compound represented by E:



E

wherein

X represents O or S;

Y represents O or S;

R represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

R₂ represents H;

R₃ represents optionally substituted aryl or heteroaryl;

R₄ represents H;

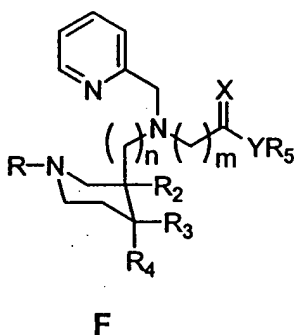
R₅ represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

m is 1 or 2; and

n is 0, 1, or 2.

58. The compound of claim 57, wherein X represents O.
59. The compound of claim 57, wherein Y represents O.
60. The compound of claim 57, wherein R represents alkyl.
61. The compound of claim 57, wherein R₃ represents optionally substituted phenyl.
62. The compound of claim 57, wherein R₅ represents H, alkyl, or aralkyl.
63. The compound of claim 57, wherein m is 1.
64. The compound of claim 57, wherein n is 1.
65. The compound of claim 57, wherein X represents O; and Y represents O.
66. The compound of claim 57, wherein X represents O; and R represents alkyl.
67. The compound of claim 57, wherein X represents O; and R₃ represents optionally substituted phenyl.
68. The compound of claim 57, wherein X represents O; and R₅ represents H, alkyl, or aralkyl.

69. The compound of claim 57, wherein X represents O; and m is 1.
70. The compound of claim 57, wherein X represents O; and n is 1.
71. The compound of claim 57, wherein X represents O; Y represents O; R represents alkyl; and R₃ represents optionally substituted phenyl.
72. The compound of claim 57, wherein X represents O; Y represents O; R represents alkyl; and R₅ represents H, alkyl, or aralkyl.
73. The compound of claim 57, wherein X represents O; Y represents O; R represents alkyl; R₃ represents optionally substituted phenyl; and R₅ represents H, alkyl, or aralkyl.
74. The compound of claim 57, wherein X represents O; Y represents O; R represents methyl; R₃ represents 4-chlorophenyl; R₅ represents ethyl; m is 1; and n is 1.
75. A compound represented by F:



wherein

X represents O or S;

Y represents O or S;

R represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxy carbonyl, or alkylaminocarbonyl;

R₂ represents H;

R₃ represents H;

R₄ represents optionally substituted aryl or heteroaryl;

R₅ represents H, alkyl, alkoxyl, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

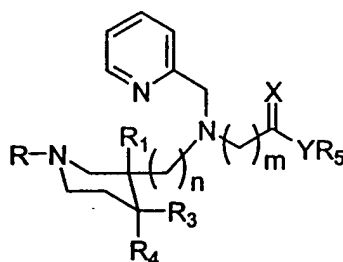
m is 1 or 2; and

n is 0, 1, or 2.

76. The compound of claim 75, wherein X represents O.
77. The compound of claim 75, wherein Y represents O.
78. The compound of claim 75, wherein R represents alkyl.
79. The compound of claim 75, wherein R₄ represents optionally substituted phenyl.
80. The compound of claim 75, wherein R₅ represents H, alkyl, or aralkyl.
81. The compound of claim 75, wherein m is 1.
82. The compound of claim 75, wherein n is 1.
83. The compound of claim 75, wherein X represents O; and Y represents O.
84. The compound of claim 75, wherein X represents O; and R represents alkyl.
85. The compound of claim 75, wherein X represents O; and R₄ represents optionally substituted phenyl.
86. The compound of claim 75, wherein X represents O; and R₅ represents H, alkyl, or aralkyl.
87. The compound of claim 75, wherein X represents O; and m is 1.
88. The compound of claim 75, wherein X represents O; and n is 1.
89. The compound of claim 75, wherein X represents O; Y represents O; R represents alkyl; and R₄ represents optionally substituted phenyl.
90. The compound of claim 75, wherein X represents O; Y represents O; R represents alkyl; and R₅ represents H, alkyl, or aralkyl.
91. The compound of claim 75, wherein X represents O; Y represents O; R represents alkyl; R₄ represents optionally substituted phenyl; and R₅ represents H, alkyl, or aralkyl.

92. The compound of claim 75, wherein X represents O; Y represents O; R represents methyl; R₄ represents 4-chlorophenyl; R₅ represents ethyl; m is 1; and n is 1.

93. A compound represented by G:



G

wherein

X represents O or S;

Y represents O or S;

R represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

R₁ represents H;

R₃ represents optionally substituted aryl or heteroaryl;

R₄ represents H;

R₅ represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

m is 1 or 2; and

n is 0, 1, or 2.

94. The compound of claim 93, wherein X represents O.

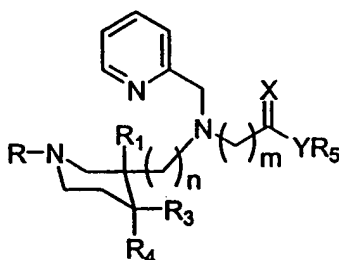
95. The compound of claim 93, wherein Y represents O.

96. The compound of claim 93, wherein R represents alkyl.

97. The compound of claim 93, wherein R₃ represents optionally substituted phenyl.

98. The compound of claim 93, wherein R₅ represents H, alkyl, or aralkyl.

99. The compound of claim 93, wherein m is 1.
100. The compound of claim 93, wherein n is 1.
101. The compound of claim 93, wherein X represents O; and Y represents O.
102. The compound of claim 93, wherein X represents O; and R represents alkyl.
103. The compound of claim 93, wherein X represents O; and R₃ represents optionally substituted phenyl.
104. The compound of claim 93, wherein X represents O; and R₅ represents H, alkyl, or aralkyl.
105. The compound of claim 93, wherein X represents O; and m is 1.
106. The compound of claim 93, wherein X represents O; and n is 1.
107. The compound of claim 93, wherein X represents O; Y represents O; R represents alkyl; and R₃ represents optionally substituted phenyl.
108. The compound of claim 93, wherein X represents O; Y represents O; R represents alkyl; and R₅ represents H, alkyl, or aralkyl.
109. The compound of claim 93, wherein X represents O; Y represents O; R represents alkyl; R₃ represents optionally substituted phenyl; and R₅ represents H, alkyl, or aralkyl.
110. The compound of claim 93, wherein X represents O; Y represents O; R represents methyl; R₃ represents 4-chlorophenyl; R₅ represents ethyl; m is 1; and n is 1.
111. A compound represented by H:



H

wherein

X represents O or S;

Y represents O or S;

R represents H, alkyl, alkoxyl, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

R₁ represents H;

R₃ represents H;

R₄ represents optionally substituted aryl or heteroaryl;

R₅ represents H, alkyl, alkoxyl, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

m is 1 or 2; and

n is 0, 1, or 2.

112. The compound of claim 111, wherein X represents O.
113. The compound of claim 111, wherein Y represents O.
114. The compound of claim 111, wherein R represents alkyl.
115. The compound of claim 111, wherein R₄ represents optionally substituted phenyl.
116. The compound of claim 111, wherein R₅ represents H, alkyl, or aralkyl.
117. The compound of claim 111, wherein m is 1.
118. The compound of claim 111, wherein n is 1.
119. The compound of claim 111, wherein X represents O; and Y represents O.
120. The compound of claim 111, wherein X represents O; and R represents alkyl.
121. The compound of claim 111, wherein X represents O; and R₄ represents optionally substituted phenyl.
122. The compound of claim 111, wherein X represents O; and R₅ represents H, alkyl, or aralkyl.
123. The compound of claim 111, wherein X represents O; and m is 1.
124. The compound of claim 111, wherein X represents O; and n is 1.

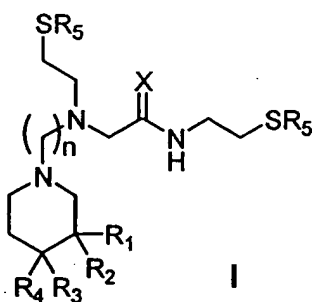
125. The compound of claim 111, wherein X represents O; Y represents O; R represents alkyl; and R₄ represents optionally substituted phenyl.

126. The compound of claim 111, wherein X represents O; Y represents O; R represents alkyl; and R₅ represents H, alkyl, or aralkyl.

127. The compound of claim 111, wherein X represents O; Y represents O; R represents alkyl; R₄ represents optionally substituted phenyl; and R₅ represents H, alkyl, or aralkyl.

128. The compound of claim 111, wherein X represents O; Y represents O; R represents methyl; R₄ represents 4-chlorophenyl; R₅ represents ethyl; m is 1; and n is 1.

129. A compound represented by I:



wherein

X represents O or (H)₂;

R represents H, alkyl, alkoxyl, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

R₁ represents -C(O)OR;

R₂ represents H;

R₃ represents optionally substituted aryl or heteroaryl;

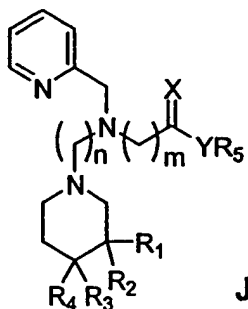
R₄ represents H;

R₅ represents independently for each occurrence H, alkyl, alkoxyl, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl; and

n is 1, 2, 3, 4, or 5.

130. The compound of claim 129, wherein X represents O.

131. The compound of claim 129, wherein R represents alkyl.
132. The compound of claim 129, wherein R_3 represents optionally substituted phenyl.
133. The compound of claim 129, wherein R_5 represents H or aralkyl.
134. The compound of claim 129, wherein n is 3.
135. The compound of claim 129, wherein X represents O; and R represents alkyl.
136. The compound of claim 129, wherein X represents O; and R_3 represents optionally substituted phenyl.
137. The compound of claim 129, wherein X represents O; and R_5 represents independently for each occurrence H or aralkyl.
138. The compound of claim 129, wherein X represents O; and n is 3.
139. The compound of claim 129, wherein X represents O; R represents alkyl; and R_3 represents optionally substituted phenyl.
140. The compound of claim 129, wherein X represents O; R represents alkyl; and R_5 represents independently for each occurrence H or aralkyl.
141. The compound of claim 129, wherein X represents O; R represents alkyl; R_3 represents optionally substituted phenyl; and R_5 represents independently for each occurrence H or aralkyl.
142. The compound of claim 129, wherein X represents O; R represents methyl; R_3 represents 4-chlorophenyl; R_5 represents independently for each occurrence H or triphenylmethyl; and n is 3.
143. A compound represented by J:



wherein

X represents O or S;

Y represents O or S;

R represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

R₁ represents -C(O)OR;

R₂ represents H;

R₃ represents optionally substituted aryl or heteroaryl;

R₄ represents H;

R₅ represents H, alkyl, alkoxy, alkylamino, aryl, heteroaryl, aralkyl, heteroaralkyl, acyl, alkoxycarbonyl, or alkylaminocarbonyl;

m is 1 or 2; and

n is 0, 1, or 2.

144. The compound of claim 143, wherein X represents O.
145. The compound of claim 143, wherein Y represents O.
146. The compound of claim 143, wherein R represents alkyl.
147. The compound of claim 143, wherein R₃ represents optionally substituted phenyl.
148. The compound of claim 143, wherein R₅ represents H, alkyl, or aralkyl.
149. The compound of claim 143, wherein m is 1.
150. The compound of claim 143, wherein X represents O; and Y represents O.
151. The compound of claim 143, wherein X represents O; and R represents alkyl.
152. The compound of claim 143, wherein X represents O; and R₃ represents optionally substituted phenyl.
153. The compound of claim 143, wherein X represents O; and R₅ represents H, alkyl, or aralkyl.
154. The compound of claim 143, wherein X represents O; and m is 1.

155. The compound of claim 143, wherein X represents O; Y represents O; R represents alkyl; and R₃ represents optionally substituted phenyl.
156. The compound of claim 143, wherein X represents O; Y represents O; R represents alkyl; and R₅ represents H, alkyl, or aralkyl.
157. The compound of claim 143, wherein X represents O; Y represents O; R represents alkyl; R₃ represents optionally substituted phenyl; and R₅ represents H, alkyl, or aralkyl.
158. The compound of claim 143, wherein X represents O; Y represents O; R represents methyl; R₃ represents 4-chlorophenyl; R₅ represents ethyl; and m is 1.
159. A complex, comprising a radionuclide; and a compound of claim 1, 15, 29, 43, 57, 75, 93, 111, 129, or 143.
160. The complex of claim 159, wherein the radionuclide is technetium.
161. A method of imaging brain tissue of a mammal, comprising the step of administering to a mammal a sufficient amount of a complex of claim 159.
162. The method of claim 161, wherein the radionuclide is technetium.
163. A method of imaging dopamine transporters in brain tissue of a mammal, comprising the step of administering to a mammal a sufficient amount of a complex of claim 159.
164. The method of claim 163, wherein the radionuclide is technetium.